

**Listing of the Claims:**

1. (previously presented) An electronic device circuit comprising:
  - a bus interface for communications with a host;
  - an interface unit electrically coupled to the bus interface for downloading
  - 5               operational firmware from the host and receiving initialization data required
  - for initializing the electronic device from the host;
  - a control circuit electrically coupled to the interface unit for transferring the
  - downloaded operational firmware to a volatile memory; and
  - a microprocessor electrically coupled to the control circuit for executing the
  - 10              downloaded operational firmware while stored in the volatile memory;
  - wherein the microprocessor controls the normal operations of the electronic
  - device circuit according to the downloaded operational firmware, and the
  - initialization data contains instructions required to initialize the components of the
  - electronic device circuit before the microprocessor is able to execute the
  - 15              operational firmware.
2. (previously presented) The electronic device circuit of claim 1 wherein the bus
- interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.
- 20   3. (previously presented) The electronic device circuit of claim 1 wherein the interface
- unit is a macro.
4. (previously presented) The electronic device circuit of claim 3 wherein the macro
- comprises handshaking, data reception, and writing received data into the memory
- 25              functions.
- 5-6. (cancelled)

7. (previously presented) The electronic device circuit of claim 1 wherein the host is a computer system.
8. (previously presented) The electronic device circuit of claim 1 wherein the  
5        microprocessor executes the downloaded operational firmware without accessing a non-volatile memory.
9. (previously presented) The electronic device circuit of claim 1 wherein the normal  
10        operations of the electronic device circuit at least include reading data from an optical disc.
10. (previously presented) The electronic device circuit of claim 1 wherein the volatile  
15        memory comprises the downloaded operational firmware being executed by the microprocessor to control normal operations of the electronic device circuit.
11. (previously presented) An electronic device comprising a download mode wherein  
20        operational firmware is downloaded from an external host and stored into a volatile memory of the electronic device and initialization data required for initializing the electronic device is received from the external host, followed by a normal mode  
25        wherein a microprocessor of the electronic device executes the operational firmware stored in the volatile memory to control normal operations of the electronic device, wherein the initialization data contains instructions required to initialize the components of the electronic device before the microprocessor is able to execute the operational firmware.
12. (previously presented) The electronic device of claim 11 wherein the normal  
      operations of the electronic device at least include reading data from an optical disc, processing the data, and transferring the processed data to the host.

13. (cancelled)

14. (previously presented) The electronic device of claim 11 wherein the operational  
5 firmware is downloaded over a bus interface conforming to USB, IDE, SATA, SAS,  
or SCSI interface standards.

15. (previously presented) The electronic device of claim 11 wherein the host is a  
computer system.

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16. (previously presented) A method of operating an electronic device, the electronic  
device comprising a control circuit connected to a microprocessor, a volatile  
memory, and a bus interface connected to a host, the method comprising:  
downloading operational firmware from the host;  
15 receiving initialization data required for initializing the electronic device from the  
host, wherein the initialization data contains instructions required to  
initialize the components of the electronic device before the microprocessor  
is able to execute the operational firmware;  
writing the operational firmware into the volatile memory; and  
20 the microprocessor executing the operational firmware in the volatile memory to  
control normal operations of the electronic device.

17. (cancelled)

25 18. (original) The method of claim 16 wherein the operational firmware is downloaded  
over a bus interface conforming to USB, IDE, SATA, SAS, or SCSI interface  
standards.

19. (previously presented) The method of claim 16 further comprising the electronic device transmitting an electrical signal to an application program in the host to begin downloading the operational firmware.

5 20. (original) The method of claim 16 wherein the host is a computer system.

21. (previously presented) A computer system comprising:

a host computer comprising operational firmware for controlling operations of an electronic device and initialization data required for initializing the electronic device; and

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the electronic device comprising:

a volatile memory comprising the operational firmware downloaded from the host computer over a connecting bus interface; and

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a microprocessor executing the operational firmware in the volatile memory for controlling normal operations of the electronic device;

wherein the electronic device further receives the initialization data from the host computer, and the initialization data contains instructions required to initialize the components of the electronic device before the microprocessor is able to execute the operational firmware.

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22. (previously presented) The computer system of claim 21 wherein the normal operations of the electronic device at least include controlling the rotational speed of an optical disc in the electronic device and reading data from the optical disc.

25 23. (original) The computer system of claim 21 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

24. (cancelled)

25. (previously presented) An electronic device controller comprising:
- a bus interface for communications with a host;
  - a volatile memory for storing operational firmware downloaded from the host;
  - 5 a microprocessor for controlling normal operations of the electronic device by executing the operational firmware stored in the volatile memory;
  - an RF circuit; and
  - a control circuit connected to the bus interface, the volatile memory, the microprocessor, and the RF circuit;
- 10 wherein initialization data required for initializing the electronic device is received from the host, and the initialization data contains instructions required to initialize the components of the electronic device before the microprocessor is able to execute the operational firmware.
- 15 26. (previously presented) The electronic device controller of claim 25 wherein the volatile memory comprises the downloaded operational firmware being executed by the microprocessor to control normal operations of the electronic device.
- 20 27. (previously presented) An electronic device circuit used in a host system, wherein the electronic device circuit has operational firmware downloaded from the host system to a volatile memory through a bus interface every time after the host being powered on, the electronic device circuit comprising:
- a microprocessor for executing the downloaded operational firmware while stored in the volatile memory;
- 25 wherein the microprocessor controls the normal operations of the electronic device according to the downloaded operational firmware, and initialization data required for initializing the electronic device circuit is received from the host system, and the initialization data contains instructions required to initialize the

components of the electronic device circuit before the microprocessor is able to execute the operational firmware.

28. (previously presented) The electronic device circuit of claim 27 wherein the bus  
5 interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

29. (cancelled)

30. (previously presented) The electronic device circuit of claim 27 wherein the host  
10 system is a computer system.

31. (previously presented) The electronic device circuit of claim 27 wherein the  
microprocessor executes the downloaded operational firmware without accessing a  
non-volatile memory.  
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32. (previously presented) The electronic device circuit of claim 27 wherein the host  
system comprises the volatile memory.

33. (previously presented) The electronic device circuit of claim 27 wherein the host  
20 system comprises a host controller accessing the volatile memory that is shared by  
the host system and the microprocessor during the normal operation.

34. (previously presented) The electronic device circuit of claim 27 wherein the volatile  
memory is accessed only by the electronic device circuit on the normal operation.  
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35. (previously presented) The electronic device circuit of claim 27 wherein the electronic  
device circuit comprises the volatile memory.

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36-37. (cancelled)